DOCUMENT RESUME

ED 078 971 PS 006 747

AUTHOR Rusch, Reuben R.; Dinkmeyer, Don
TITLE A Report on the Findings of One Experimental Study.
PUB DATE 5 Apr 72
NOTE 12p.; Paper presented at the Task Force Symposium (LaSalle, Illinois, April 5, 1972)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Affective Behavior; *Early Childhood Education; *Elementary School Students; *Guidance Programs; Interpersonal Competence; Interpersonal Relationship; *Program Effectiveness; Self Concept; *Social Development
IDENTIFIERS Developing Understanding of Self and Others (DUSO)

ABSTRACT

This study was designed to assess the relative effectiveness of one available guidance program at the elementary level, Developing Understanding of Self and Others (DUSO). The program is appropriate for young children, ages 5 through 8, and attempts through listening, inquiry, discussion, and role playing to help children better understand social-emotional behavior. A review of the literature produced no appropriate measuring instrument. Thus, a specially prepared device for assessing the affective objectives of the program was constructed and used. Results indicated that DUSO was an effective guidance program. (Author/ST)

ED 078971

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

A REPORT ON THE FINDINGS OF ONE EXPERIMENTAL STUDY

Reuben R. Rusch
Don Dinkmeyer

Task Force Report: A Preliminary Model of Counseling and Human Development (Symposium, Division E)
Wednesday, April 5, Room K (LaSalle) 4:00-6:00

PS 007247

Abstract

This study was designed to assess the relative effectiveness of one available guidance program at the elementary level, Developing Understanding of Self and Others (DUSO). The program, published by American Guidance Services, Incorporated, is appropriate for young children, ages 5 through 8, and attempts through listening, inquiry, discussion, and role playing to help children better understand social-emotional behavior. A review of the literature produced no appropriate measuring instrument. Thus, a specially prepared device for assessing the affective objectives of the program was constructed and used. The data were analyzed using the frequently followed guidance research model wherein the statistical and experimental unit is confused. These results are then compared with the results - using an appropriate research model wherein the statistical and experimental unit approach isomorphism.

Background and Introduction

This study was designed to test the effectiveness of the DUSO Guidance Program (Developing Understanding of Self and Others) with selected first and second grade children. Developing Understanding of Self and Others, published by American Guidance Services, is aimed at young children, ages 5 through 8, and focuses on the development of purposeful behavior that is personally significant and socially satisfying. The program helps the child with the self and with the social components of living. Experiences are designed to help the child become more aware of himself as a social being. The program helps the individual understand the purposive and causal nature of human relationships. As he becomes aware of his own purposes and goals, he becomes able to function more effectively with others and more involved in the educational process.

Program activities are structured so that teachers may work with children on various activities and through flexible scheduling. That is, teachers may use the program on a daily basis throughout a full school year, or the teacher may select activities to fit the needs and interests of the group at the moment. In addition to the manual, the materials include two story books, records or cassettes, posters, puppet activity cards, puppets, puppet props, role playing cards and group discussion cards.

In Developing Understanding of Self and Others developmental tasks provide the goals for guidance and education. The program offers experiences with eight developmental tasks that the normal individual faces in his development. All children need help with these tasks. Some children need more help that others. The purpose of the program is to provide experience in understanding and coping with the eight tasks:

1. Self-identity, self-acceptance, developing an adequate self-image and feelings of adequacy.

2. Learning a giving-receiving pattern of affection.

3. Learning to develop mutuality, moving from being self-centered to effective peer relations.

4. Learning to become reasonably independent, to develop self-control.

5. Learning to become purposeful, to seek the resources and responsibilities of the world, to become involved, and to respond to challenge with resourcefulness.

6. Learning to be competent, to achieve, to think of self as capable of mastery.

7. Learning to be emotionally flexible and resourceful.

8. Learning to make value judgments and choices, and to accept the consequences of one's choices.

For each task there is an introductory story and a song. After this introduction, the following set of activities are suggested, as a weekly cycle:

1. A story followed by discussion
2. A poster to be discussed
3. A problem situation followed by discussion
4. A role playing activity
5. A puppet activity
6. Several supplementary activities to be used as desired
7. Recommended supplementary reading (stories to be read to the class by the teacher, or read independently by individual pupils).

The author of the DUSO Program developed a rationale for the program model, by loosely tying together some of the ideas of Piaget, Dewey and Long (Dinkmeyer, 1971). More recently he suggests that there are certain social-emotional tasks which the child must accomplish as he progresses (matures). In this respect the model is fashioned after the theories of Adler, Havighurst,

and Combs. Underlying the author's rationale, three themes or assumptions become apparent; (1) learning is experiencing, (2) affective components have a significant effect on attaining cognitive skills, and (3) the teacher is an effective agent in arranging learning experiences for children.

To more fully understand the goals of the program, one can read the objectives found in the role playing descriptions and the puppet activities. Some of these objectives for Unit I, Understanding and Accepting Self, follow:

to help children to learn to recognize and accept individuality in themselves and others.

to help children accept themselves as they are unique individuals

to help children accept imperfection in themselves

to help children to see that people are different

Since the study was designed to test the effectiveness of the DUSO Program with first and second grade children, it was imperative that a suitable device be found which would, indeed, determine whether the program objectives were accomplished. This search has been reported previously (Flugsrud, 1971).

Procedure

The Randomized Post Test Only Design was selected for the study (Ignas, 1971). Fundamental to this design is the presence of a control group as well as the random assignment of subjects to the experimental and control conditions. At the end of the treatment or no treatment period, both groups are given a test. If one group (E or C) scores significantly different from the other group, this difference can presumably be attributed to the treatment or absence of treatment, since all other factors are assumed to be randomized. The important rival hypotheses of history and maturation are ruled out. That is, although the experiment takes place over some time period, both groups are subjected to the same events of the time (history)

and both groups can logically be expected to be influenced equally by experiencing life (maturation) or growing older.

The purpose of the study was to assess the effectiveness of the DUSO Program. The rationale of the author of the program indicates that one would expect children who experience these activities to accomplish certain stated objectives. One might conclude, therefore, that children who do not experience these activities would not accomplish the objectives to the same extent. Since there is a theoretical as well as logical foundation for the expectation, the statistical hypotheses to be tested is a directional or alternative hypothesis, following Kimmel (1957). Specifically, one would expect the mean of the experimental group to be greater than the mean of the control group. Symbolically, this might be represented as follows:

$$H_1 : \mu_E > \mu_C$$

The sample for this study was drawn from seven available schools in Illinois, where one of the authors had contacts with members of the teaching and/or administrative staff. Only those classrooms volunteered by teachers were used. In each school, the subjects of one volunteered classroom were randomly assigned to the experiment group and the subjects of the other volunteered classroom were randomly assigned to the control group. The experimental subjects in seven classrooms were exposed to the DUSO Program. The control subjects in seven other classrooms were not. Aside from this program, the courses of study for the experimental and control groups were similar.

Upon completion of the DUSO Program of Activities, presentation of which took place over approximately eight weeks during one school year, the DUSO Affectivity Device was administered to all subjects. The DUSO Affectivity

Device consists of 51 items to which the child responds "yes" or "no". It was especially designed to assess the objectives stated in the DUSO Program. The initial steps in the development of this instrument have been reported by Nelson and Amedore (1971). Further use of the device with a limited sample and a report of the initial reliability and validity has been made by Holmes and Flugsrud (1972).

Results

Since the items on the DUSO Affectivity Device were written to correspond to the specific objectives of each of the eight units, the scores are similarly computed and reported separately for each unit. The means for each sub-part and for the total score are reported for the 77 experimental and the 77 control subjects in Table I. For Unit I, the mean of the Experimental group was 5.84, while the mean for the Control group was 5.23. Other figures in the Table can be interpreted similarly.

Following the guidance and curriculum model for research the mean total score for the 77 experimental and 77 control subjects are compared. For the Experimental Group, the mean was 38.78. For the Control Group 37.01. The critical value for the .05 level of significance (one tailed test) is 1.67. The computed critical value was 1.83. Therefore, we can conclude that the mean of the experimental group is greater than the mean of the control group. Furthermore, on the basis of our design, we might logically take this to mean that the DUSO Program was effective in producing the difference.

ED 006242

TABLE I - POST TEST MEANS: EXPERIMENTAL AND CONTROL SUBJECTS

Unit	$\overline{X}_E$	$\overline{X}_c$
I	5.84	5.23
II	5.86	5.78
III	4.49	4.21
IV	5.13	4.94
V	5.13	5.01
VI	4.92	4.68
VII	2.09	1.95
VIII	4.26	5.22
Total	38.78	37.01

$N_E = 77$ C.R. = 1.83

$N_c = 77$ $\alpha = .05$ = crit. value = 1.67

d.f. = 152

Rebuttal

The dilemma of whether to use a directional hypothesis and the corresponding one tailed test or a null hypothesis and the two tailed test faces every researcher. Obviously, many do not agree with the conclusions of Kimmel (1957) or Marks (1951). For example, Burke (1954) questions whether the use of the one-tailed test is ever appropriate. Baken (1966) questions the ethics and perhaps the morality of any researcher who uses a one-tail test. Almost all agree, of course, that if the results are in the opposite direction one has nothing (whether significant or not)! That is, if the mean in our example for the control group was 38.78 and the mean for the experimental group was 37.01, and if we used a directional hypothesis (one tailed test) as we did, in the direction we did, in our results reported previously, we could only state that the results were not significant in the predicted direction. We could not say the results were significant in the opposite direction from that predicted. Our directional hypothesis and

the resulting one-tail test obviated this.

If we had used the two-tailed test and the .05 level of significance in the reported study, we would fail to reject the null hypothesis; there is no significant difference between the means of the experimental and control groups. In that case, we would have concluded that the treatment (DUSO Program) was ineffective. For interest, a comparison of one tail and two tail tests (directional vs null) of the significant differences between means is reported for all sub-scores and the total score in Table II.

TABLE II - POST TEST MEANS: EXPERIMENTAL AND CONTROL GROUPS (ONE TAIL AND TWO TAIL TESTS)

Unit	$\bar{X}_E$	$\bar{X}_c$	CR	2 tail	1 tail
I	5.84	5.23	2.32	Sign	Sign
II	5.86	5.78	.39	NS	NS
III	4.49	4.21	1.97	NS	Sign
IV	5.13	4.94	1.78	NS	Sign
V	5.13	5.01	2.14	Sign	Sign
VI	4.92	4.68	1.43	NS	NS
VII	2.09	1.95	1.09	NS	NS
VIII	4.26	5.22	2.42	Sign	Sign
Total	38.78	37.01	1.83	NS	Sign

Whether the one-tail or the two-tail test and its corresponding hypothesis should have been used is not the primary error of the design and analysis, however. The major flaw, is that the authors have followed the model frequently found in the guidance literature wherein they have confused the experimental and/or statistical unit. For the statistical analysis, the data which are to be considered are the outcomes of independent replications of the experiment. "The experimental units are the smallest divisions of the collection of experimental subjects which have been randomly assigned to the different conditions in the experiment..." (Peckham, 1969). In following the guidance research model, the results reported above were not

based on the smallest division randomly assigned to the different conditions in the experiment. The random assignment was made in terms of teachers volunteered classrooms, not in terms of randomly assigned pupils. Since the smallest unit randomly assigned was the classroom, the appropriate unit for analysis is the classroom mean, which is treated as a raw score. The n for this analysis is the number of classrooms: seven experimental and seven control.

In purposely confusing the experimental and statistical unit in the results reported above, the authors were following a model frequently found in guidance research and perhaps more frequently in curriculum, or methods of instruction research. That is, the random assignment to conditions is the classroom and the teacher or the guidance counselor, rather than the pupil.

In any experiment where differences in counselors or differences in teachers may be a factor, the randomization should be moved back to the counseling group or the classroom. Stated another way, when there is a remote possibility that the treatment across groups may vary due to counselor or teacher ability or personality, the score for analysis is the mean of the group, rather than the scores of the subjects in each group (Rusch, 1969).

The data presented in Table III show the corrected analysis. The mean for the seven experimental groups on Unit I is 5.85 and for the seven control groups 5.20. Other figures in the table can be interpreted similarly. Each of the means in Table III is the mean of either seven experimental group means or seven control group means. Thus, the individual group means are treated as raw scores, the classrooms are randomized, the experimental unit

and statistical unit approach isomorphism, and the components of the experimental conditions approximate the mathematical model employed.

TABLE III - POST TEST MEANS: USING THE CLASS AS THE EXPERIMENTAL UNIT (ONE TAIL AND TWO TAIL TESTS)

Unit	$\overline{X}_E$	$\overline{X}_c$	CR	2-tail	1-tail
I	5.85	5.20	1.60	NS	NS
II	5.88	5.71	.54	NS	NS
III	4.49	4.17	1.57	NS	NS
IV	5.11	4.91	.26	NS	NS
V	5.11	5.02	.40	NS	NS
VI	4.91	4.64	1.50	NS	NS
VII	2.07	1.95	.69	NS	NS
VIII	5.32	5.27	.09	NS	NS
Total	38.48	36.80	1.28	NS	NS

$N_E = 7$

$N_E = 7$

d.f. = 12

two tail $\alpha = .05$ crit.val. 2.18
one tail $\alpha = .05$ crit.val. 1.78

Under the correct data analysis, one concludes that the experimental group was not significantly different from the control group and in this case, whether one used a directional or null hypothesis, the conclusion is quite the same.

References

Bakan, David — The Test of Significance in Psychological Research, PSYCHOLOGICAL BULLETIN, Vol. 66 No. 6. December 1966, pp 423-437

Burke, C. J. — Further Remarks on One-Tailed Tests, PSYCHOLOGICAL BULLETIN, Vol. 51 No. 6, 1954 pp 587-590

Dinkmeyer, Don — A Theoretical Rationale for the DUSO Guidance Program AERA, Division E. Task Force Symposium Feb. 4, 1971. To be published in ARGR JOURNAL, Spring 1972.

Flugsrud, Marcia — A Review of Literature on Assessment Devices, Division E, Task Force Symposium Feb. 4, 1971. To be published in ARGR JOURNAL, Spring, 1972.

Holmes, Sandra; Flugsrud, Marcia; and Rusch, Reuben R. — Reliability and Validity of the DUSO Affectivity Device; Some Preliminary Findings, Division E. Task Force Symposium April 5, 1972.

Ignas, Edward — The Experimental Design for Evaluating DUSO, Division E, Task Force Symposium Feb. 4, 1971. To be published in ARGR JOURNAL, Spring, 1972.

Kimmey, Herbert D. — Three Criteria for the Use of One-Tailed Tests. PSYCHOLOGICAL BULLETIN, Vol. 54, No. 4, 1957, pp 351-353.

Marks, Melvin R. — Two Kinds of Experiment Distinguished in Terms of Statistical Operations, PSYCHOLOGICAL REV., 1951, 51, pp 179-184.

Nelson, William and Amedore, George — The Development of an Assessment Device Division E. Task Force Sumposium, Feb. 4, 1971. To be published in ARGR JOURNAL, Spring 1972.

Peckham, Percy D. Glass, Gene V. and Hopkins, Kenneth D. — The Experimental Unit in Statistical Analysis JOURNAL OF SPECIAL EDUCATION Vol. 3, pp. 337-349

Rusch, Reuben R. — Methods of Instruction Design (Simple Two Groups Design) July 28, 1969. Classroom handout for Educational Research Course.